



FOREST HEALTH AND INVASIVE PLANTS

Fairfax County Park Authority

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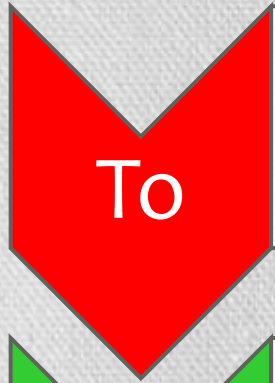
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Brief History of Fairfax County Forests

- Pre 1492 – Hunting grounds(?)
- Mid 1600s – settlement and tobacco
- Mid 1700s – wheat
- Mid 1800s – timber, Cabell's Mill
- 1860's – Civil War
- 1870 – 1950 Dairy
- 1972 – 71% canopy cover
- 2007 – 41% canopy cover



Energy flow in healthy forest



- SUN



- Plants
- (photosynthesis)



- Animals

Vertical Forest Structure



Keeping our forests healthy

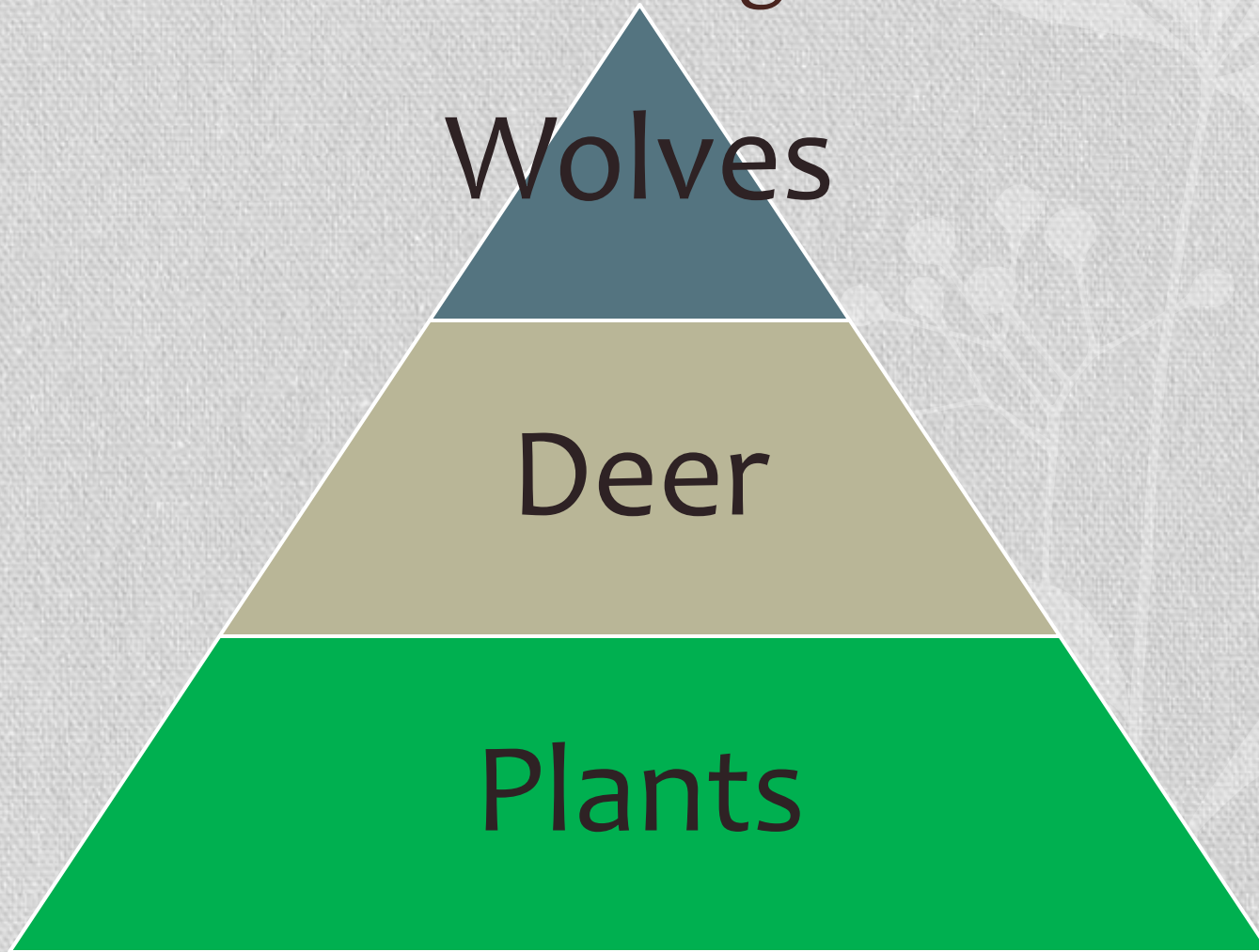


Threats to forests

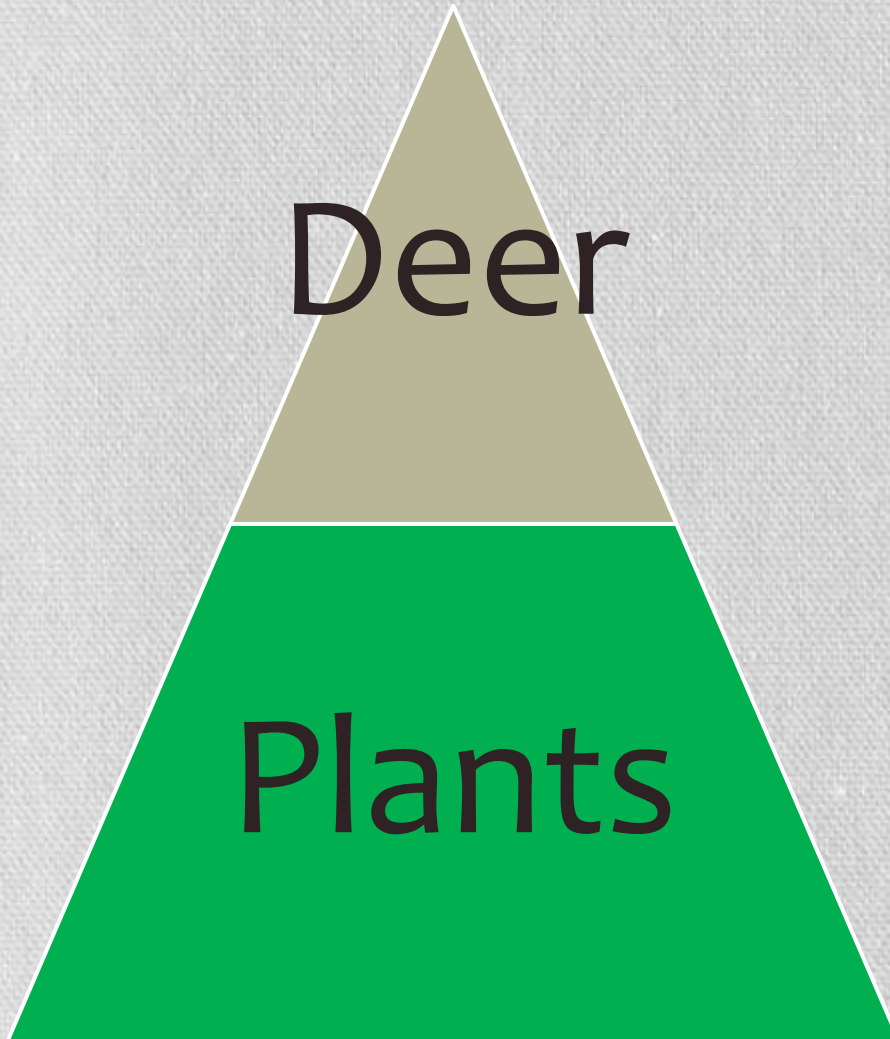
- Deer
- Invasive Plants
- Invasive pests



Historical Regulation



Missing apex predator



- Deer population is now controlled by starvation.
- Deer consume all available energy on forest floor and lower shrub layer.
- As death and growth remove plants from the shrub layer, it disappears without recruitment from the forest floor

Excessive Deer = Disturbance = Invasives

Deer preferentially feed upon native plant regeneration creating ideal conditions for invasive plant establishment



Deer Browse Line
Sully Historic Park




Missing Regeneration
Sully Assemblage

High diversity



Low diversity





An *invasive species* is,
generally, a non-native
species that causes
ecological or economic harm.

Invasive Plants

- Historically not grown naturally in Fairfax County
- Out compete native species
- Form monocultures which decreases biodiversity
- Thrive in disturbed habitats



Why are “invasives” so bad?

- Loss of biodiversity
- Widespread habitat alteration
- Impact ecosystem services
- Affect industry and recreation
- Obvious impact on the parks
 - Tree death
 - Habitat alteration
 - Loss of species

Where do they come from?

- Other countries- many from Asia
- Other parts of the United States
- Gardens
- Yards



How do they spread?

- People
- Animals
- Wind
- Water
- Cars
- Gardens
- Packing material



Characteristics of invasive plants

- Produce a ton of seeds
- Grow very quickly
- Start growing early in the spring and continue late in the fall- many grow all year!
- Wildlife does not eat usually eat them or they are not as nutritious as native plants.
- Change the soil chemistry





So what's the big deal?

There is strong evidence implicating invasive species
in the reduction in biodiversity



Monoculture





Abundance



Edges



Disturbance

Impact on Local Forests

Mt. Vernon District

Groveton Heights



Native plants

- Historically have been growing in Fairfax County
- Are used to competing with other native species
- Enhance biodiversity
- Provide habitat for wildlife



Benefits of Native Plants

- Native plants preserve our ecosystem
- Going natural can mean LESS WORK FOR YOU
 - Native plants are adapted for local conditions, requiring less water, pesticide, and fertilizer
 - Native landscapes can be beautiful and low-maintenance (especially grasses and wildflowers)
 - There are lots of options for native trees, shrubs, and flowers depending on the site conditions
- Native Plant Resources:
 - Fairfax County and Green Spring Garden Master Gardener Programs
 - Virginia Native Plant Society





How to help

- Plant native alternatives
- Wash your shoes before going into a park and again before you leave
- Volunteer!
- Stay on trails





How to restore the habitat

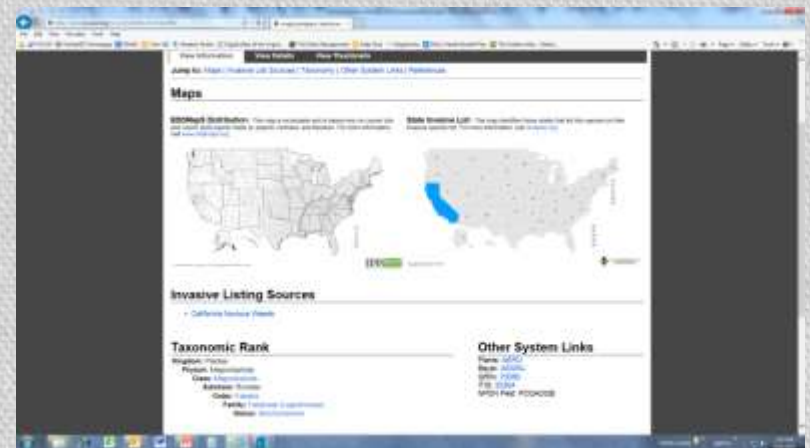
- Removing vines from trees
- Clearing out invasives by hand
- Replanting



Other Learning Resources

- Parktakes Online
 - Nature programs for kids and grown-ups
 - <http://www.fairfaxcounty.gov/parks/parktakes/>
- Doug Tallamy
<http://www.bringingnaturehome.net>

- <http://www.invasive.org>
- <http://www.vaplantatlas.org/>
- <https://www.eddmaps.org/midatlantic/>





NNI species



Deer browse



NNI species



Healthy forest

A photograph of a dense forest. Tall, slender trees with green foliage form the canopy. The forest floor is covered with a thick layer of green ferns and other undergrowth. The lighting is soft, suggesting a shaded environment.

QUESTIONS?